

REMARKS

Status of the claims

With the above amendments, claims 42 and 51 have been canceled without disclaimer of or prejudice to the subject matter therein, and claims 52-55 have been added. Accordingly, claims 15, 16, 20-23, 32-34, 38-40, 43-50, and 52-55 are pending and ready for further action on the merits. No new matter has been added by way of the above amendments. Support for the new claims 52-55 can be found, for example, specifically at paragraphs [0059]-[0069] and Figures 4-7 as well as elsewhere throughout the specification, figures, and original claims.

Applicants maintain and point out that claim 46 was entered in a previous Response but not specifically considered in the Office Action dated April 28, 2009 nor was it considered in the Office Action dated January 29, 2008.

Reconsideration is respectfully requested in light of the following remarks.

35 U.S.C. § 102 and Claims 15, 16, 21, 22, 32-34, 38, 39, and 43-50

The Examiner has rejected claims 15, 16, 21, 22, 32-34, 38, 39, and 43-50 under 35 U.S.C. § 102(b) as being anticipated by United States Patent No. 3,854,184 to Katz (hereinafter "Katz"). Applicants traverse.

Applicants respectfully submit that "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The Examiner has failed to disclose each and every element set forth in the claims.

A. Deficiencies of Katz and Office's Responses to Arguments

Katz discloses a conventional shrink fit assembly. See Katz, col. 2, lines 27-32. The assembly of Katz is held in place by solely by frictional forces exerted between the contacting surfaces of the closure and the mandrel as a result of the shrink fit assembly. Katz does not describe an assembly that remains intact due to the presence of a mechanical interlock. In contrast, the presently claimed methods provide a method to disassemble a preloaded and interlocked assembly: an assembly which relies upon a mechanical interlock or force to hold the assembly intact.

The descriptions within Katz relied upon by the Office that allegedly describe a preloaded and interlocked assembly first include:

“...preloaded and interlocked (Fig. 7, left end portion of mandrel flange portion is interlocked with circular hub 14)...”

See Office Action dated April 28, 2009, p. 2, § 2, lines 6-7. Further, within the Office Action, the Office has provided in the “Response to Arguments” section, that Katz allegedly:

“teaches a method to disassemble a preloaded and interlocked assembly (Fig. 7, left end portion of mandrel flange portion is interlocked with circular hub 14) and relies [on] mechanical interference to keep the assembly intact.”

See *id.* at p. 5.

Applicants vigorously assert that such characterizations of Katz are wrong. The circular hub 14 shown in Figure 7 of Katz is a hollow cylinder in which a cylindrical mandrel may be inserted. Figure 7 and the description thereof *does not provide any* teaching or disclosure that the hub 14 is coupled with a cylindrical mandrel to create an assembly relying on a mechanical interlock.

In fact, Figure 7 does not even depict the structure 13 which is a mandrel. Applicants assert that Figure 7 does not disclose any “left end portion of mandrel flange portion” that can even be “interlocked with circular hub 14.” It appears that the Office is reading into Figure 7 a “left end portion of mandrel flange portion” that is not present whatsoever in Figure 7. Further, Katz fails to describe the mandrel as having a “flange portion” as proffered by the Office in its rejection anywhere in its disclosure.

In fact, it appears that the Office is misinterpreting the structure shown in Figure 7. Any “left end portion” of the structure in Figure 7 that appears to have a non-cylindrical shape is in fact a portion of the hub 14. The left end portion of the hub 14, which is angled or tapered, is simply a mouth-like structure or a chamfer which aids a mandrel in being initially aligned or guided into the central cylindrical shaft of the hub 14. This angled or tapered structure serves *no purpose* to create a preloaded and interlocked assembly and does not create any mechanical interlock of *any kind*. In fact, Figure 4 shows this point clearly. The through bore 12 is positioned within the shaft of hub 14. The angle portion or “left end portion” (in which the Office apparently relied upon in Fig. 7) is vacant in Fig. 4 and does not provide any interlocking connection within the device described in Katz. Thus, the mouth-like feature designed to assist

in the initial alignment of the mandrel and the hub serves *no purpose* related to an interlocking of the assembly in Katz.

If the Office believes that structure 15 and/or structure 16 provides any interlocking connection, these structures also fail to describe such interlocking. Structure 15 is a groove which allows heating plate 16 to be seated within the device. These flange-like structures serve the purpose to distribute heat through the hub, and not any function related to the interlocking of any assembly. Structure 16 is part of the removable heater, as shown in Figure 6. The assembly cannot rely on structure 16 to remain attached to the mandrel 12 because the structure 16 is part of the heater, not part of the assembled structure.

B. Presently Recited Claims

The presently recited independent claims each include limitations which provide a method for disassembling a preloaded and interlocked assembly. Such a preloaded and interlocked assembly comprises mechanical interferences or interlocks to keep the assembly intact. In fact, the holding power of such an assembly as claimed may be limited by the material strength rather than by friction by the elements of the assembly. *See* Specification at ¶ [0069]. Katz does not disclose or contemplate such a preloaded and interlocked assembly.

In view of the foregoing, Applicants respectfully assert that claims 15, 40, and 43 are not anticipated by Katz under § 102(b) and respectfully request that the Examiner withdraw the rejection of claims 15, 40, and 43. As claims 16, 21, 22, 32-34, 38, 39, and 44-50 depend from and further limit claim 15 and 43, Applicants respectfully assert that claims 16, 21, 22, 32-34, 38, 39, and 44-50 are patentable over Katz and respectfully request that the Examiner withdraw the rejections of 16, 21, 22, 32-34, 38, 39, and 44-50 as well.

35 U.S.C. § 103 and Claims 20, 23, and 40

The Examiner has rejected claims 20, 23, and 40 under 35 U.S.C. § 103(a) as being unpatentable over Katz. Applicants traverse.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). For similar to reasons as set forth above, Katz does not teach or suggest all the limitations of claims 15 and 40. Katz describes and teaches a demountable printing cylinder that utilizes

conventional shrink-fitting techniques. The assembly of Katz relies solely upon the frictional forces exerted between two surfaces in order to keep the assembly intact. Katz does not describe or teach a preloaded and interlocked assembly that utilizes both frictional forces and mechanical interlocks or forces.

Conventional shrink-fitting techniques, like those found in Katz, is a labor-intensive coupling often with high costs required to create such assemblies. *See* Specification at ¶ [0007]. Alternatively, conventional snap-together or snap-fit techniques provide an assembly that may be easier to create, but often sacrifices rigidity. A preloaded and interlocked assembly, as recited in the presently claimed methods, provides a strong assembly with no or minimal play or clearance between the elements while utilizing minimal amounts of time, effort, and/or energy to create the assembly. A preloaded and interlocked assembly eliminates clearances normally required by a snap-fit coupling which allows a stronger assembly. *See id.* at ¶ [0007]. Further, a preloaded and interlocked assembly as recited in the presently claimed methods includes elements that are sufficiently deformed to preload the assembly. *See id.* at ¶ [0040].

As previously set forth, the preloaded and interlocked assembly as recited in the present methods may operate in the absence of frictional forces. The presently claimed methods describe an assembly that functions utilizing mechanical forces where the elements of the assembly mechanically interlock with a corresponding element. Katz does not describe or teach a rigid assembly that operates utilizing any mechanical forces where the elements of the assembly mechanically interlock with a corresponding element.

Accordingly, the teachings of Katz are insufficient to render claim 15 or 40 *prima facie* obvious under 35 U.S.C. § 103(a). In view of the foregoing, Applicants respectfully assert that claims 15 and 40 are patentable over Katz under § 103(a). As claims 20 and 23 depend from and further limit claim 15, Applicants respectfully assert that claims 20, and 23 are patentable over Katz and respectfully request that the Examiner withdraw the rejections of claims 20 and 23 as well.

Claim 46

Claim 46 was not examined in the Office Action dated April 28, 2009 (nor was it considered in the Office Action dated January 29, 2008). Applicants respectfully assert that the cited prior art does not render claim 46 anticipated or obvious. Katz does not disclose an

assembly that is at least partially snap-fit. Instead, Katz is limited to a conventional shrink-fit coupling. The assembly of Katz is bound by friction only. Accordingly, Applicants respectfully request that claim 46 be allowed.

New Claims 52-55

New claims 52-55 have been entered into the present application. For at least similar reasons as provided above, Applicants respectfully assert that the cited prior art does not render new claims 52-55 anticipated or obvious. Support for the new claims 52-55 can be found, for example, specifically at paragraphs [0059]-[0069] and Figures 4-7. The method claimed in new claims 52-55 provides a method for disassembling an assembly where the assembly may rely upon mechanical interlock, rather than friction to securely couple a first element and a second element. *See* Specification at ¶ [0061]. Additionally, Katz fails to describe or teach any assembly that comprising a first protrusion and a first end in contact with each other. Accordingly, Applicants respectfully request that claims 52-55 be allowed.

CONCLUSION

With the above amendments and remarks, Applicants believe that all objections and/or rejections have been obviated. Thus, each of the claims remaining in the application is in condition for immediate allowance. A passage of the instant invention to allowance is earnestly solicited.

Applicants believe that no additional fee, other than the fee submitted in connection with the petition for extension of time and request for continued examination, is necessary; however, should a fee be deemed to be necessary, the Commissioner is hereby authorized to charge any fees required by this action or any future action to Deposit Account No. 16-1435.

Should the Examiner have any questions relating to the instant application, the Examiner is invited to telephone the undersigned (Reg. No. 58,909) at (336) 607-7347 to discuss any issues.

Respectfully submitted,

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